UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
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ATLANTA, GEORGIA 30303-8960

JAN 25 2016

Earl D. Bandy Jr., Director
Knoxville Field Office
Office of Surface Mining Reclamation and Enforcement
John J. Duncan Federal Building
710 Locust Street, 2nd Floor
Knoxville, Tennessee 37902

Re: Cumberland Wildlife Management Area, Tennessee Lands Unsuitable for Mining, Draft Petition Evaluation Document and Draft Environmental Impact Statement (DEIS), Anderson, Morgan, and Scott Counties, Tennessee; ERP No.: OSM-E67008-TN; CEQ No.: 20150346.

Dear Mr. Bandy:

The Environmental Protection Agency Region 4 Office has received and reviewed the subject document and is commenting in accordance with §309 of the Clean Air Act (CAA) and §102(2)(C) of the National Environmental Policy Act (NEPA). The Office of Surface Mining Reclamation and Enforcement (OSMRE) proposes to designate those lands identified, in the State of Tennessee's 2010 petition, with a modification: a 1,200-foot corridor for 505 miles of ridgeline as lands unsuitable for surface coal mining. The modification is to allow re-mining, associated operations and road construction, and SMCRA-required reclamation, of 183.7 miles of highwall within the 505-mile ridgeline.

The EPA rated the DEIS as 'Environmental Concerns' (EC-2), indicating its review identified new, reasonably available alternatives within the spectrum of alternatives analyzed, which could potentially reduce the environmental impacts of the proposed action. The EPA recommends that the OSMRE refine its preferred alternative to avoid re-mining where natural reclamation is facilitating achievement of State-designated water uses and quality, a rebound in aquatic ecosystem diversity, and the reestablishment of forest, which is important to aquatic ecosystems and water quality within mountain-ridgeline headwaters. Additionally, the EPA recommends the OSMRE refine its preferred alternative to consider in its "Lands Unsuitable for Mining" (LUM) designation all undisturbed acreage associated with active Surface Mining Control and Reclamation Act (SMCRA) permits set to expire after the official LUM designation. The EPA's review also found that insufficient information was provided to fully assess all of the environmental impacts. The identified additional information, data, analyses, or discussion from the EPA's enclosure should be included in the final EIS (FEIS).

In general, the EPA supports the proposed project's purpose and need and detailed study alternatives. The EPA recommends that all of the technical comments in the enclosure be addressed in the FEIS. We recommend that all relevant environmental impacts not disclosed in this document or covered in the FEIS be addressed in additional NEPA documentation prior to the issuance of a Record of Decision (ROD).

Should you have any questions concerning these comments, please contact Ms. Beth Walls, of my staff, at walls.beth@epa.gov or 404-562-8309. We appreciate the opportunity to comment on the proposed LUM designation.

Sincerely,

G. Alan Farmer
Director
Resource Conservation and Restoration Division

Enclosure

ENCLOSURE
Draft Environmental Impact Statement (DEIS)
North Cumberland Wildlife Area,
Tennessee Lands Unsuitable for Mining (LUM), Tennessee.
CEQ No. 20150346; ERP Number OSM-E67008-TN

Key or Significant Environmental Impacts
The proposed action as presented is primarily an environmentally protective action. The proposed action has the potential to protect important, ephemeral headwater streams and associated ecosystems important for feeding wildlife and aquatic ecosystems of higher order streams. The proposed action would protect 66, 311 acres of the state-petitioned 67,326 acres. The purpose of the proposed action is to protect 19.6 acres of the identified 84.3 acres of wetlands. Of the 19.3 acres, 17.3 of these protected acres are identified as previously altered or artificial wetlands and 2.3 acres are identified as natural. According to the DEIS, the lead Federal agency proposes to protect 356 miles of aquatic habitats including 81 miles of state-identified Tier 1 priority aquatic habitat of which 63 miles is considered "high" priority. The action also proposes to protect 18,436 acres of state-identified Tier I priority terrestrial habitat, of which 16,004 acres has been identified as the "very highest priority." In addition, the action proposes to protect the State's petitioned 1,200-foot corridor for 505 miles of ridgeline. However, 183.7 miles of highwall along this ridgeline will be available for future re-mining, associated operations and road construction, and the Surface Mining Control and Reclamation Act (SMCRA) required reclamation.

Affected Environment
The proposed action is located on the ridgelines contained within the North Cumberland Wildlife Management Area (NCWMA) and Emory River Tract Conservation Easement (ERTCE). Although the ERTCE is evaluated in this draft EIS (DEIS), the Office of Surface Mining Reclamation and Enforcement (OSMRE) believes that surface coal mining operations are not authorized in the ERTCE based upon its review of existing property rights and the conservation easement language. Additionally, no commercial mineable coal resources exist within the ERTCE. These two issues involving the ERTCE may need to be made clearer in the FEIS. The NCWMA and the ERTCE contain some of the highest elevations in Tennessee outside of the Blue Ridge province bordering North Carolina. Elevations range from 1,100 feet above mean sea level to approximately 3,200 feet above mean sea level. Over 830 miles of streams lie within the boundaries of the NCWMA and ERTCE area. The vast majority of these streams flow north into the Cumberland River watershed. The principal streams draining this portion of the petition area are New River and Clear Fork. The remaining streams flow south into the Clinch River watershed. The principal streams draining this portion of the petition area are the Emory River and Cove Creek. Ninety-one percent of this area is forested.

Purpose and Need
Pursuant to the SMCRA, the State of Tennessee filed a petition with the OSMRE to designate certain state lands as "Lands Unsuitable for Mining" (LUM). The desired LUM designation will prohibit future issuance of surface coal-mining permits within the designated area. As the SMCRA regulatory authority in Tennessee, the OSMRE evaluated the State's petition to designate as LUM a 1,200-foot corridor (600 feet on each side) for 505 miles of ridgelines, approximately 67,326 acres, within the boundaries of the NCWMA and ERTCE. According to the State, surface coal mining operations affecting these ridgelines are incompatible with existing State, or local land-use, plans or programs and will affect fragile or historic lands. The potential result being significant damage to important historic, cultural, scientific, and aesthetic values and natural systems.

In 2013, only about 4.5% of the Tennessee coal production (approximately 54,000 tons) came from permitted areas within the NCWMA and ERTCE. In 2008, approximately 25% of all coal produced in Tennessee came from the NCWMA and approximately 21% came from the ERTCE. The OSMRE does not expect that the proposed action will change the total amount of coal production within the designated LUM area. Instead, it anticipates shifts in the method and location of mining.

According to the OSMRE, it cannot designate those lands covered by an existing SMCRA permit as unsuitable for surface coal mining. Consequently, those lands covered under an OSMRE permit at the time of the OSMRE's official LUM-designation will not be included in the LUM. Because the LUM-designation is applicable only to surface coal mining, underground and auger mining will continue to be permitted within the area designated as LUM. Although the associated surface operations and surface impacts incident to these operations will only be permitted for Alternative 1. The EPA requests that the FEIS provide greater clarification on those lands covered by an existing SMCRA permit that cannot be designated as unsuitable for coal mining.

Alternatives

The OSMRE evaluated six alternatives. Under Alternative 1, all types of coal mining and supporting infrastructure activities will continue because no lands will be designated as LUM ("no action"). Alternative 2 is the State's petition to designate 505 miles of mountain ridgeline, 1,200-foot corridor, covering 67,326 acres as unsuitable for mining. Under Alternative 2, prohibited activities include re-mining and the construction of associated access and haul roads. According to the OSMRE, Alternative 2 is the short-term environmentally preferable alternative because it designates the State's requested area and avoids the short-term impacts of re-mining and associated road construction. However, the OSMRE believes that the long-term impacts associated with pre-SMCRA acid mine drainage and sedimentation will remain unaddressed. Alternative 3, the preferred alternative, is similar to the State's petition except it allows re-mining of pre-SMCRA mining sites, and the construction of associated access and haul roads, with the intent of reclaiming these sites. Alternative 3 proposes to designate as LUM the State's petitioned 505 miles of ridgeline with a 1,200 foot corridor (66,311 acres). Alternative 4 expands the State's petition request to 569 miles of ridgeline, with the same 1,200-foot corridor, covering 76,133 acres. The OSMRE identified Alternative 4 as the long-term environmentally preferable alternative for two reasons. It designates the largest land area, and additionally, re-mining is permitted with the expectation for the SMCRA-required reclamation to reduce pre-SMCRA acid-mine drainage. Alternative 5 designates lands as unsuitable based upon the presence of sensitive resources, not ridgelines, and proposes to protect environmentally sensitive habitat areas within a 12,331-acre area. Alternative 6, like the State's petition request, includes the same 505 miles of mountain ridgeline but reduces the protected corridor to 600 feet (300 feet on each side of the ridgeline) or 39,106 acres.

Recommendations

Preferred Alternative Recommendation #1

The EPA recommends that the OSMRE refine its preferred alternative (i.e. Alternative #3) to avoid re-mining where natural reclamation is facilitating achievement of State-designated water uses and quality (i.e., where no acid mine drainage impacts are occurring), a rebound in aquatic ecosystem diversity, and the reestablishment of forest, which is important to aquatic ecosystems and water quality within mountain-ridgeline headwaters. According to the OSMRE, coal mining has occurred within the area at varying levels of intensity for over 100 years. The SMCRA was passed in 1977. Consequently, it is possible for some pre-SMCRA sites to have lain dormant or over 50 years subject to natural reclamation processes. Moreover, the DEIS states that re-mining would disturb habitat that has been established for the last fifty years or more. According to the DEIS, areas cleared of timber to facilitate mining

operations and road construction will require a substantial amount of time to return to a forested condition. For example, the time required to grow an oak forest to economic or natural maturity may be 30 to 150 years depending on the site, desired product, and landowner objectives.

The OSMRE indicates that the majority of the proposed LUM area lies within the South Fork of the Cumberland River Watershed, specifically the New River drainage and the headwaters of the Cumberland River Watershed within the Clear Fork drainage. The DEIS identifies the New River watershed as being the most impacted by surface mining activity with approximately 24,000 acres of pre-SMCRA mining impacts. According to the OSMRE, the New River watershed's two most heavily mined sub-watersheds are Beech Fork (approximately 17.5% disturbed) and Montgomery Fork (approximately 15% disturbed). These areas, according to the OSMRE, likely may benefit most from the re-mining consistent with the OSMRE's SMCRA regulations because of the requirements for restoration.

The OSMRE has selected its preferred alternative based upon their opinion that re-mining is valuable for its reclamation potential. However, if background contaminant levels are low indicating natural reclamation for these abandoned (pre-SMCRA) mine lands, then re-mining may be of questionable benefit. Table 4-8 of the DEIS indicates most of the measured water-quality parameters are below the threshold levels and reportedly many of the sampling stations are located in headwater streams close to these pre-SMCRA mines. The DEIS also states that the most vulnerable wetlands are those near existing coal reserves and those located near past mining sites because of re-mining impacts.

The DEIS states the Tennessee Valley Authority (TVA) has documented several environmentally-sensitive wetlands within the Koppers Coal Reserve within the NCWMA. According to the DEIS, the potential coal mining impacts to wetlands include direct removal of the wetland, acid drainage, sedimentation, and alteration of the hydroperiod. The DEIS also states fluctuations in the frequency and duration of time a wetlands is saturated (hydroperiod) affects the wetlands' hydrologic, ecological, and water quality functions. For example, changes to a wetlands' hydroperiod strongly influences amphibian species richness and presence/absence. According to the DEIS, many amphibian species breed extensively or exclusively in small isolated wetlands. Their larvae cannot persist if there is a disruptive change in the frequency, duration, and timing of the wetland hydroperiod. The DEIS states mining operations can have direct and indirect impact to a wetland's hydroperiod by either increasing or decreasing the amount of water entering a wetlands.

According to the OSMRE, a survey of 30 headwater streams indicates historical and current coal mining impacts remain a source of subtle effects to water quality and macroinvertebrate community impairment throughout the region. If current (SMCRA-permitted) mining is having an impact, then permitted re-mining can be expected to also have an impact, potentially more than subtle. The DEIS does not explain how re-mining impacts to water quality, aquatic ecosystems, and wetlands will be reclaimed under SMCRA to a higher level than what is currently being documented. Additionally, the DEIS does not provide an anticipated duration of impairment associated with re-mining and any subsequent reclamation activities.

The DEIS states that surface coal mining and reclamation operations *minimize* disturbances and adverse impacts of the operation on fish, wildlife, and related environmental values *to the extent possible* using the *best technology currently available* and enhancement of those resources *where practicable*. However, *best technology currently available* and enhancement *where practicable* does not demonstrate or guarantee the reclamation will improve impacts associated with pre-SMCRA mining where these effects have been naturally attenuated. Furthermore, the DEIS states under the preferred alternative,

impacts to aquatic species will occur in portions of the Cumberland River, Clinch River, and Powell River watersheds within the proposed LUM area. Furthermore, the DEIS indicates that best management practices (BMPs) and compliance with applicable regulations and permit conditions will minimize, but not eliminate, impacts to this resource. While under the State's petition alternative, aquatic species within all of the watersheds within the evaluation area will be protected under Alternative 2.

Consequently, the EPA recommends that the OSMRE provide case studies where monitoring data and other environmental information demonstrate previous successes with using the *best technology available* and enhancement *where practicable* to inform how the aquatic ecosystem, e.g., Federal and State-listed endangered or threatened species, and water quality has benefited. For example, the Fall Creek Falls, the designation as Tennessee Lands Unsuitable for Surface Coal Mining and Reclamation still permits re-mining because "*there would be significant benefits from re-mining in the headwaters of Piney Creek watershed.*[1]" The EPA recommends that the OSMRE provide examples of how re-mining has benefited the Pine Creek watershed's headwaters to support its opinion that re-mining is valuable for its reclamation potential of the ridgelines proposed for LUM designation.

Preferred Alternative Recommendation #2

The EPA recommends that the OSMRE refine its preferred alternative to consider in its LUM designation all undisturbed acreage associated with active permits set to expire after the official LUM designation. The DEIS states that the OSMRE cannot designate as LUM, those lands covered by an existing SMCRA permit and the LUM-designated area will not include areas under permit at the time of its designation. In Table 5-45, the DEIS indicates that OSMRE- permits may have a short duration. For example, Mine No. 4's permit had a duration of approximately 4 years, expiring on 10/27/2015. However, the DEIS also indicates that there are 7 active permanent program permits on the 'Pewee seam' in and immediately adjacent to the NCWMA and ERTCE.

Table 5-45 of the DEIS also indicates that the issuance of a permit does not necessarily mean mining commences during the permitted period. For example, according to Table 5-45, Mine No. 4 was a permitted 497-acre mine where no acres were disturbed prior to permit expiration. Table 5-46 indicates that 56 acres of the permitted 497 acres are "virgin" and remain undisturbed.

The EPA recommends that the OSMRE clarify whether an unmined (undisturbed) area can be designated as LUM once a permit has expired after the LUM designation. The DEIS indicates under the preferred Alternative there are 1,015 acres subject to an active permits which reduces the designated LUM area to 66,311 acres. According to the DEIS as of March 15, 2012, the OSMRE records indicated 12 permitted areas that were at least partly within the petition boundary. These included four surface mines, eight underground mines, one refuse area, and two haul roads. Additionally, six permits were identified which as of the close of 2014 had not expired and still had portions of the proposed disturbance that had not yet been disturbed. Moreover, Table 5-45 indicates an active permit does not always indicate active mining. The DEIS does not specify whether active mining is ongoing under these permits nor when they are expected to expire. Consequently, the EPA recommends that the OSMRE include a provision in its LUM designation to include all undisturbed acreage associated with permits active at the time of LUM designation that later expire within the designated LUM area.

The EPA recommends that the OSMRE avoid approving permits received after and inconsistent with the State's 2010 Petition or the DEIS's identified preferred alternative. For example, the DEIS states: "[n]*o currently permitted operations were identified within the NCWMA and ERTCE but are being proposed under the Clear Energy Corporation, Brimstone Surface Mine No. 1 permit application (OSMRE application number 3247).*" Similarly, the DEIS indicates that for the Rich Mountain Coal seam the

Triple H Coal, LLC, has recently submitted a permit application to continue mining within the NCWMA and ERTCE area.

Alternatives Analysis Recommendation
The EPA recommends that the OSMRE address the appearance of conflicting acreage information regarding the surface mining acres protected under five of the alternatives. For Alternative 2, Table 5-23 seems to indicate 54,797 acres will be excluded (protected) while the text in Chapter 6 seems to indicate only 22,122 acres will be protected. For Alternative 3, Table 5-23 seems to indicate 47,405 acres will be excluded (protected) while the text in Chapter 6 seems to indicate only 34,094 acres will be protected. For Alternative 4, Table 5-23 seems to indicate 51,483 acres will be excluded (protected) while the text in Chapter 6 seems to indicate only 37,367 acres will be protected. For Alternative 5, Table 5-23 seems to indicate 12,277 acres will be excluded (protected) while the text in Chapter 6 seems to indicate only 8,876 acres will be protected. Similarly for Alternative 6, Table 5-23 seems to indicate 34,260 acres will be excluded (protected) while the text in Chapter 6 seems to indicate only 19,166 acres will be protected.

Affected Environment Recommendation #1
The EPA recommends that the OSMRE clarify its statement that the study area is within the Upper Cumberland River Watershed. Both the DEIS' Chapter 4 and its Appendix E define the evaluation area to include 29 streams within the Upper Cumberland River Watershed. However, the State appears to define the majority of this eight-digit HUC watershed as being in Kentucky, with its southernmost reaches extending into Tennessee's Clay and Picket Counties.[2] The EPA suggests that the OSMRE clarify whether it uses a different watershed classification system and compare it to the State's watershed classifications.

Affected Environment Recommendation #2
The EPA recommends that the OSMRE clarify its statement, "[w]*aterbodies in the evaluation area include: the Emory River, South Fork Cumberland River (or Big South Fork of the Cumberland River), Upper Cumberland River, Upper Clinch River, and Powell River*." The referenced Appendix E does not specify the South Fork Cumberland River (or Big South Fork of the Cumberland River), Upper Cumberland River, Upper Clinch River, and Powell River as being within the evaluation area.

Affected Environment Recommendation #3
The EPA recommends that the OSMRE include the Tennessee Rivers Assessment project in its affected environment and environmental impacts analysis. For example, in the Emory River Watershed, this State project identifies Bobs and Greasy Creeks as having *Regional Significance* for its *Natural and Scenic Qualities*.[3] Additionally, it identifies Rock Creek as having *Local Significance* in its *Natural and Scenic Qualities* and *Regional Significance* for its *Recreational Fishery*. For the Clear Fork of the Cumberland River Watershed, this State assessment project identifies Stinking Creek as an *Excellent Fishery*.[4] For the South Fork Cumberland River Watershed, this State assessment project identifies Brimstone Creek as having *Statewide or greater Significance* for its *Natural and Scenic Qualities*.[5] Beech Fork, Puncheon Camp, Rockhouse Fork, and Smokey Creeks are identified as having *Regional Significance* for their *Natural and Scenic Qualities*.

Affected Environment Recommendation #4
The EPA suggests that the OSMRE indicate whether any additional water quality monitoring stations are available to supplement its limited water quality data for the affected water resources within the study area. The OSMRE indicates it compiled and evaluated water-quality data from 29 OSMRE ambient monitoring stations and 14 Tennessee Department of Conservation (TDEC) ambient and

ecoregion monitoring stations. These 43 water-quality sampling sites are being used to represent and evaluate a 172,000 acre (269 square mile) area, crossed by 180 named streams for approximately 643 stream miles within a complex mountainous area. In TDEC's water quality management plans for each of the 8-digit HUC watersheds overlapping the study area, it has identified other agency water-quality monitoring sites, i.e., the Corps of Engineers, the Tennessee Valley Authority, the United States Geological Survey, the National Park Service, etc.[6] Consequently, the EPA recommends that the OSMRE determine whether any of these agency water monitoring sites could help OSMRE expand its limited water-quality data used in its analysis.

The EPA also recommends that the OSMRE identify those water bodies that have not been assessed within the study area. For example, in its Emory River Watershed Water Quality Management Plan, the TDEC reports only 47-percent of the streams have been assessed to determine their attainment with designated uses.[7] In its Clear Fork of the Cumberland River Watershed, where the Royal Blue Management Area is located, the TDEC reports only 47-percent of the streams have been assessed to determine their attainment with designated uses.[8] The Royal Blue WMA appears to overlap two 10-digit HUC sub-watersheds: Hickory Creek (0513010106) and Clear Fork Creek (0513010105), of the Clear Fork of the Cumberland River Watershed.[9]

Affected Environment Recommendation #5

The EPA suggests that the OSMRE consider using the "mode" to describe the contaminant levels that occur most often in its Table 4-8 to better illustrate the background conditions within existing mined areas. Table 4-8 of the DEIS provides the mean (average) and the median (middle value) for the various water quality constituents for which water quality data was available. It is unclear what the average and median values represent in the context of contaminant levels associated with past mining activities. The *mode* may better indicate the intensity of contamination within the study area. Moreover, defining the mode as a range of contaminant values may be more informative than a single mode contaminant value.

Affected Environment Recommendation #6

The EPA recommends that the OSMRE clarify whether Alternative 2 re-mining coal resource volume as presented in the Chapter 5 text, excludes the "second cut" resource for a total re-mining coal resource excluded volume of 14.7 million tons not the stated 8.5 million. In Chapter 5, the DEIS states Alternative 2 excludes all NCWMA and ERTCE areas within the designated petition area from any and all mining-related activities. This includes any access roads and face-up areas for underground mining. Within the same chapter, the DEIS states that Alternative 2 excludes approximately 8.5 million tons of the re-mining coal resource in the NCWMA and ERTCE. However, Table 5-24 indicates 8.5 million tons is the auger resource and that the total "*reining coal resource*" is the "*second cut*" (6.3 million tons) plus the "*auger*" (8.5 million tons) resource volumes, or 14.7 million tons.

Affected Environment Recommendation #7

The EPA recommends that the OSMRE address the apparent inconsistencies in miles of highwalls provided in Chapters 3, 4, and 6 for three of the alternatives. For Alternative 1, the linear extent of highwalls has been characterized as 183.7, 201.6 miles, and 390 miles. For Alternative 3, the linear extent of highwalls has been characterized as 102 miles and 201.6 miles. And for Alternative 4, the linear extent of highwalls has been characterized as 102 miles, 112 miles, and 219.5 miles.

Affected Environment Recommendation #8

The EPA recommends that the OSMRE address the apparent inconsistencies in available re-mining acres provided in Chapters 3 and 6 for Alternatives 2 - 6. For Alternative 2, Chapter 3 seems to indicate 8,147 acres while Chapter 6 indicates 8,345. For Alternative 3, Chapter 3 seems to indicate 16,925 acres

while Chapter 6 indicates 8,346. For Alternative 4, Chapter 3 seems to indicate 16,925 acres while Chapter 6 indicates 9,094. For Alternative 5, Chapter 3 seems to indicate 15,400 acres while Chapter 6 indicates 1,422. For Alternative 6, Chapter 3 seems to indicate 12,075 acres while Chapter 6 indicates 4,909.

Affected Environment Recommendation #9
The EPA suggests that the OSMRE address the apparent inconsistencies in acreage excluded from surface mining provided in Chapters 5 and 6 for Alternatives 2 - 6. For Alternative 2, Chapter 5 seems to indicate 54,797 acres while Chapter 6 indicates 22,122. For Alternative 3, Chapter 5 seems to indicate 47,405 acres while Chapter 6 indicates 34,094. For Alternative 4, Chapter 5 seems to indicate 51,483 acres while Chapter 6 indicates 37,367. For Alternative 5, Chapter 5 seems to indicate 12,277 acres while Chapter 6 indicates 8,876. For Alternative 6, Chapter 5 seems to indicate 34,260 acres while Chapter 6 indicates 19,166.

Environmental Impacts Recommendation #1
The EPA recommends that the OSMRE clarify its ability to regulate underground mining activities. According to the DEIS, underground mining can realize subsidence-related deformation of rocks above the underground mines which could impact the overlying ridgeline inconsistent with the proposed LUM designation. Where the OSMRE has the authority, the EPA recommends it permit underground mining plans to limit their potential impacts to the overlying LUM-designated area. Where the OSMRE cannot protect the LUM-designated ridgeline from underground mining impacts, then the EPA recommends that the OSMRE identify where and the potential impacts to the LUM-designated area. Specifically, where geographically and topographically these impacts are most likely to occur given existing geological information on coal seams and potential impacts to water quality and aquatic ecosystems.

Environmental Impacts Recommendation #2
The EPA recommends that the OSMRE clarify potential re-mining impacts to any ridgeline previously unaffected by pre-SMCRA mining. The State's petition's includes ridgeline within Tennessee's 2007 '*Connecting the Cumberlands'* conservation initiative. This area contains most of the remaining older forest and an array of habitats and wildlife, including rare or threatened species. These lands are also managed by the state of Tennessee for outdoor recreational activities including hunting, hiking, and wildlife viewing. According to the OSMRE, 201.6 miles of pre-SMCRA highwalls exist within the petition area, of which the OSMRE estimates 183.7 miles (26,720 acres) are potentially surface mineable highwalls.[10] Of this total, it is unclear how many miles (acres) of the identified highwalls underlie ridgeline, and associated forest and habitats, unaffected by prior mining, which will be impacted by re-mining inconsistent with the petition's purpose. Additionally, it is unclear whether permitted mining occurring outside the proposed 1200-foot corridor will have any impact to the ridgelines that are the subject of the State's petition.

Environmental Impacts Recommendation #3
The EPA recommends that the OSMRE address the impact to carbon sequestration potential associated with Alternatives 2 – 5. The DEIS addresses this impact only for Alternative 1. Consequently, the impact to the carbon sequestration potential cannot be compared among the six alternatives. According to the DEIS, because mining reclamation under the no-action alternative only requires the establishment of vegetative cover, not reforestation, mined areas will experience a net loss of forestland. As stated in the DEIS, this reduction in forested landscapes reduces the level of carbon removed from the atmosphere.[11] Moreover, because neither SMCRA nor the implementing regulations require reforestation of previously forested mine sites, coal-mining regions experience a net loss of forested

area. This reduction in forested acreage also can result in the emission of GHGs associated with burning of forest/tree cover prior to surface mining.[12]

The OSMRE estimates that the total quantity of GHG emissions associated with surface coal mining in the evaluation area is under 25,000 metric tons CO_2 equivalent per year, which is the threshold in the Council on Environmental Quality's draft guidance on triggering GHG emissions triggering a GHG-emission quantitative analysis and the EPA's 25,000 metric-ton threshold for mandatory GHG-emission reporting from those sources representing 90% of the nation's GHG emissions.[13] The OSMRE estimates coal production to continue within the range of 54,000 to 240,000 tons per year for all six alternatives.[14] The GHG emissions associated with off-road equipment, haul trucks, and employee transportation is estimated to range from 2,531 – 7,710 metric tons per year. The estimated GHG emissions associated with surface coal mining is estimated to range from 1,479 to 6,573 metric tons. The OSMRE also estimates the GHG emissions associated with the combustion of 54,000 to 240,000 coal tons produced to range from 139,320 to 619,200 metric tons. The alternatives are not expected to result in net new GHG emissions associated with coal combustion because any change in the mining rate is anticipated to be nominal due to factors outside of coal resource availability, which drive coal demand and its consumption (e.g., economics of various energy sources, environmental regulation of coal-fired power plants, etc.).

We recognize that, while OSMRE's analysis shows that this project is not expected to result in net new GHG emissions associated with coal combustion, the DEIS conducts a quantitative analysis of GHG emissions associated with the mining area.

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[1] 65 FR 39178, 39181 (Friday, June 23, 2000)

[2] See TDEC's Upper Cumberland River Watershed (05130103) of the Cumberland River Basin website at: http://www.tennessee.gov/environment/article/wr-ws-upper-cumberland-river-watershed

[3] See: TDEC's Emory River Watershed water quality management plan, Section 2.8. Tennessee Rivers Assessment Project, available at http://www.tennessee.gov/environment/article/wr-ws-emory-river-watershed

[4] TDEC's Clear Fork of the Cumberland River Watershed Water Quality Management Plan, Section 2.8. Tennessee Rivers Assessment Project, p. 19, See: http://www.tennessee.gov/environment/article/wr-ws-south-fork-cumberland-river-watershed

[5] TDEC's South Fork Cumberland River Watershed Water Quality Management Plan, Section 2.8. Tennessee Rivers Assessment Project, p. 23, http://www.tennessee.gov/environment/article/wr-ws-south-fork-cumberland-river-watershed

[6] For example, see: TDEC's South and Clear Forks of the Cumberland River Watershed Water Quality Management Plans, available at http://www.tennessee.gov/environment/article/wr-ws-south-fork-cumberland-river-watershed and http://www.tennessee.gov/environment/article/wr-ws-clear-fork-of-the-cumberland-river-watershed , respectively.

[7] TDEC's Emory River Watershed Water Quality Management Plan, available at http://www.tennessee.gov/environment/article/wr-ws-emory-river-watershed

[8] Clear Fork of the Cumberland River Watershed Water Quality Management Plan, Section 3.3. Status of Water Quality, p. 9, See: http://www.tennessee.gov/environment/article/wr-ws-south-fork-cumberland-river-watershed

[9] Source: Clear Fork of the Cumberland River Watershed Water Quality Management Plan, Section 4.1, p. 1, See: http://www.tennessee.gov/environment/article/wr-ws-south-fork-cumberland-river-watershed

[10] Chapter 6, Introduction, p. 6-7.

[11] Chapter 6, p. 6-45.

[12] Chapter 6, p. 6-45.

[13] 40 CFR part 98; EPA 2009.

[14] Chapter 6, p. 6 – 49.